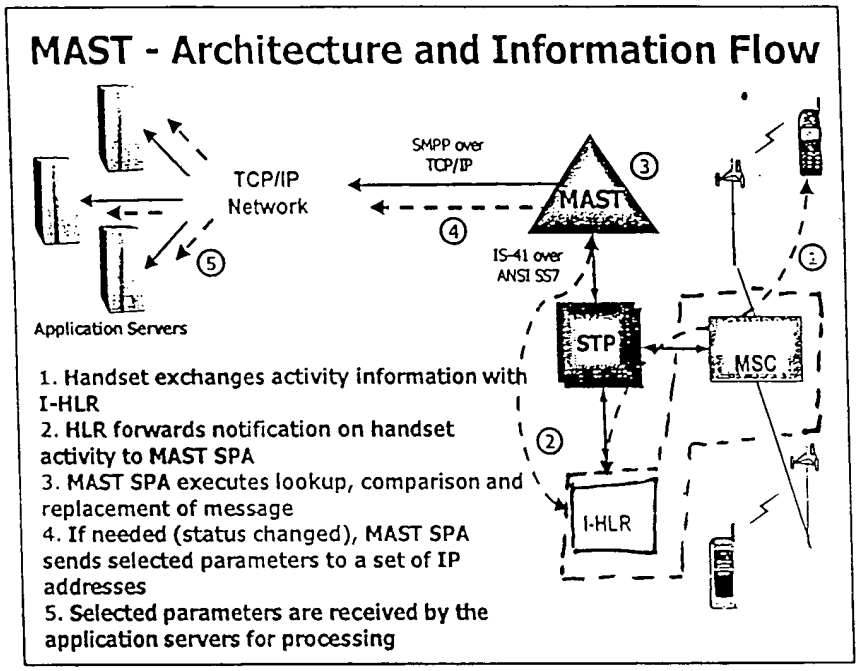


MAST Architecture and Information Flow

Fig. 1

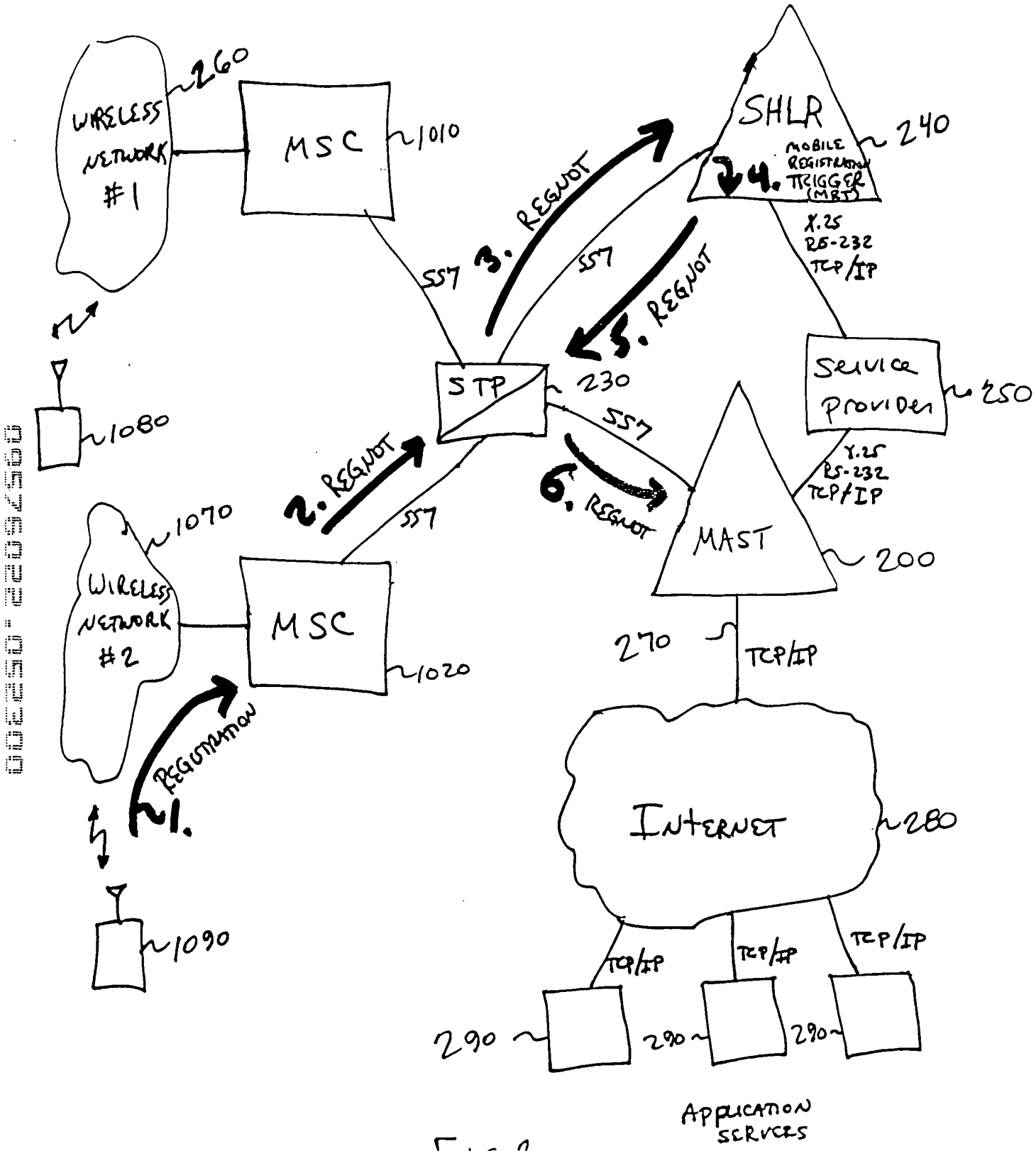

WIRELESS NETWORK #1
260
MSC
1010
SHLR
240
MOBILE REGISTRATION TRIGGER (MRT)
4.
X.25
RS-232
TCP/IP
SS7
3. REGNOT
SS7
5. REGNOT
STP
230
Service Provider
250
1080
SS7
2. REGNOT
6. REGNOT
X.25
RS-232
TCP/IP
1070
SS7
MAST
200
WIRELESS NETWORK #2
MSC
1020
270
TCP/IP
REGISTRATION
1.
INTERNET
280
TCP/IP
TCP/IP
TCP/IP
1090
290
290
290
APPLICATION SERVERS

FIG. 2

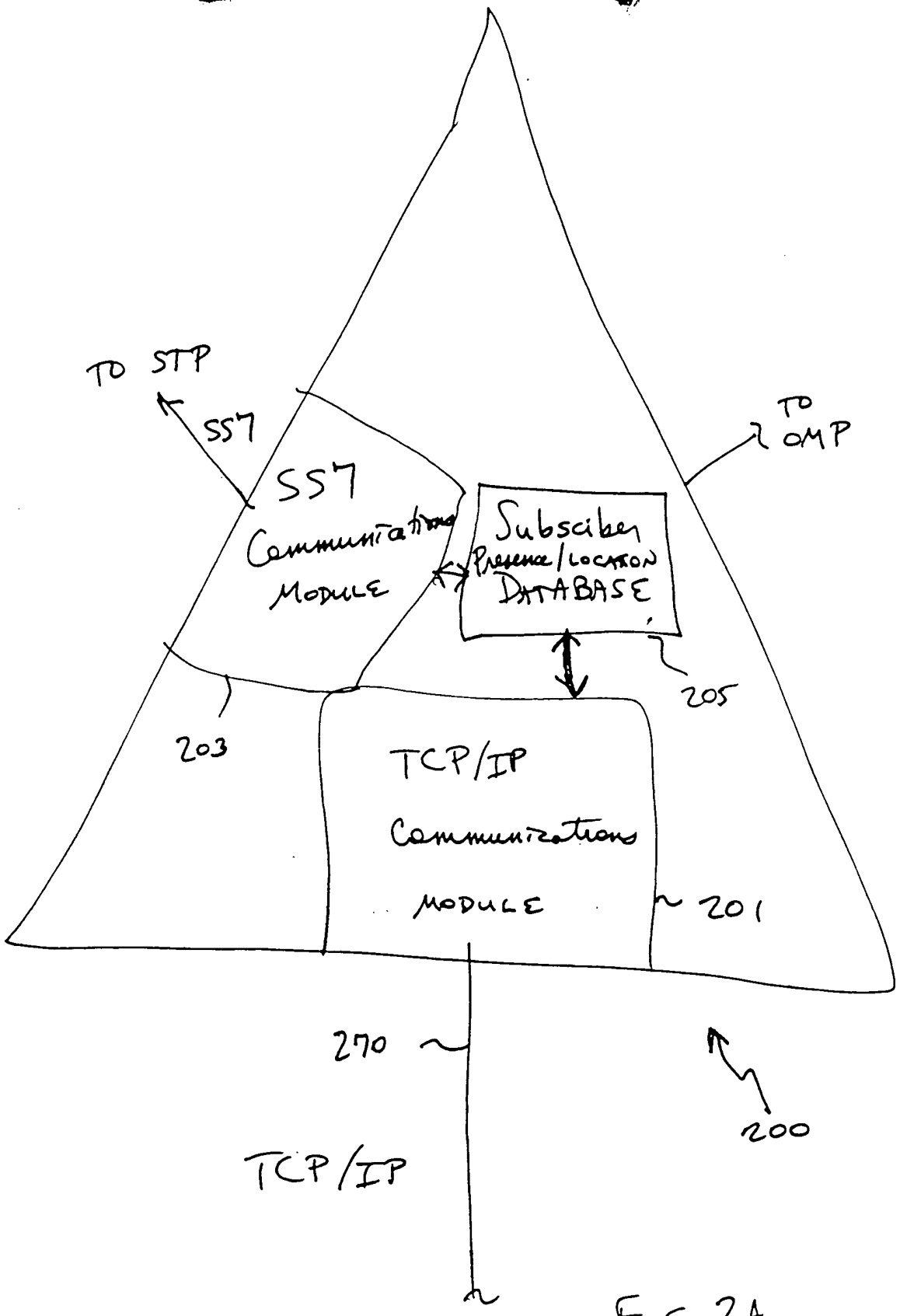

TO STP
SS7
SS7
Communications
MODULE
Subscriber
Presence/Location
DATABASE
TO
OMP
205
203
TCP/IP
Communications
MODULE
201
270
200
TCP/IP

FIG. 2A

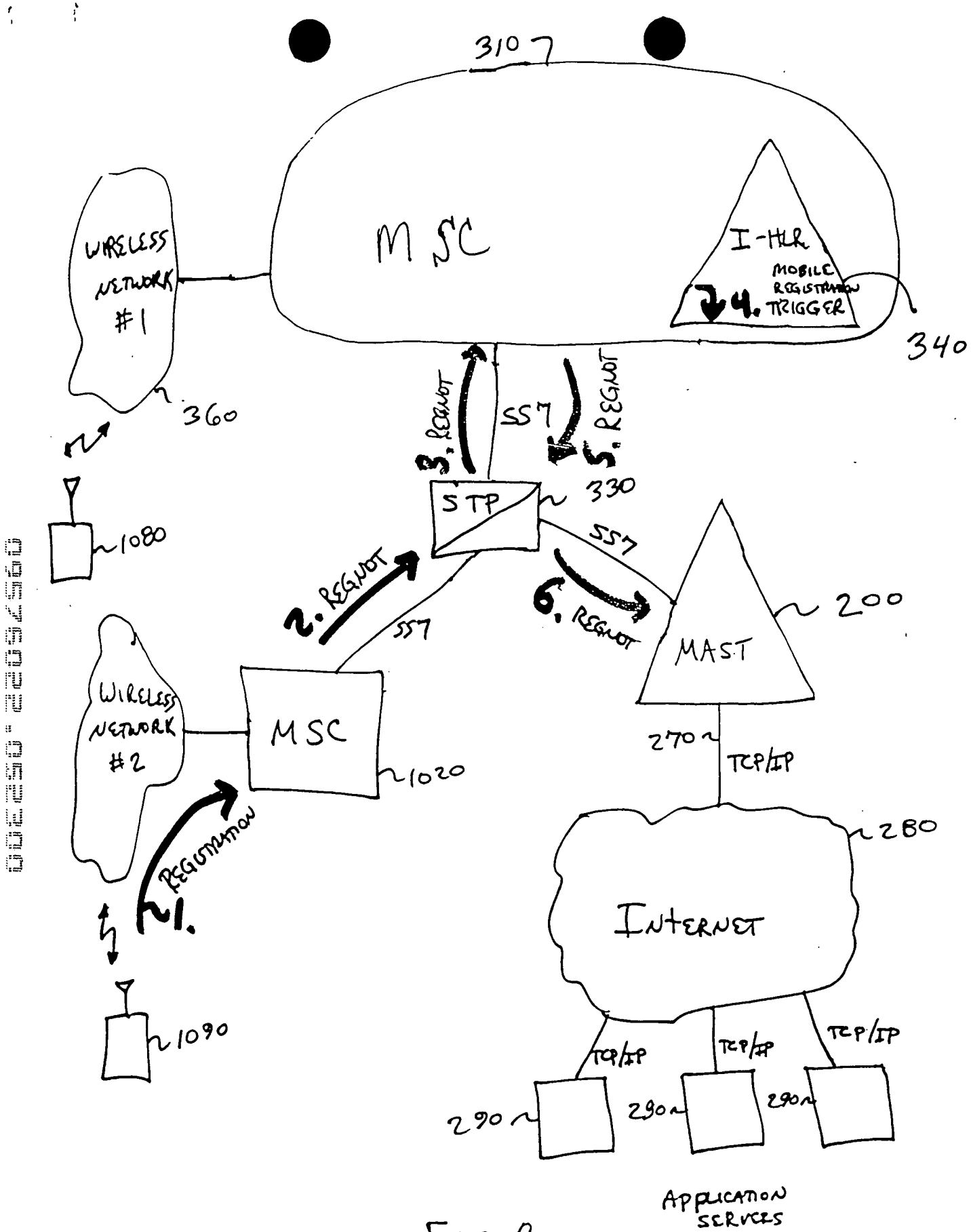

3107
MSC
WIRELESS NETWORK #1
360
I-HLR
MOBILE REGISTRATION
4. TRIGGER
340
3. REGNOT
SS7
5. REGNOT
STP
330
1080
SS7
2. REGNOT
SS7
6. REGNOT
MAST
200
WIRELESS NETWORK #2
MSC
1020
270
TCP/IP
280
REGISTRATION
1.
INTERNET
1090
TCP/IP
TCP/IP
TCP/IP
290
290
290
APPLICATION SERVERS

FIG. 3

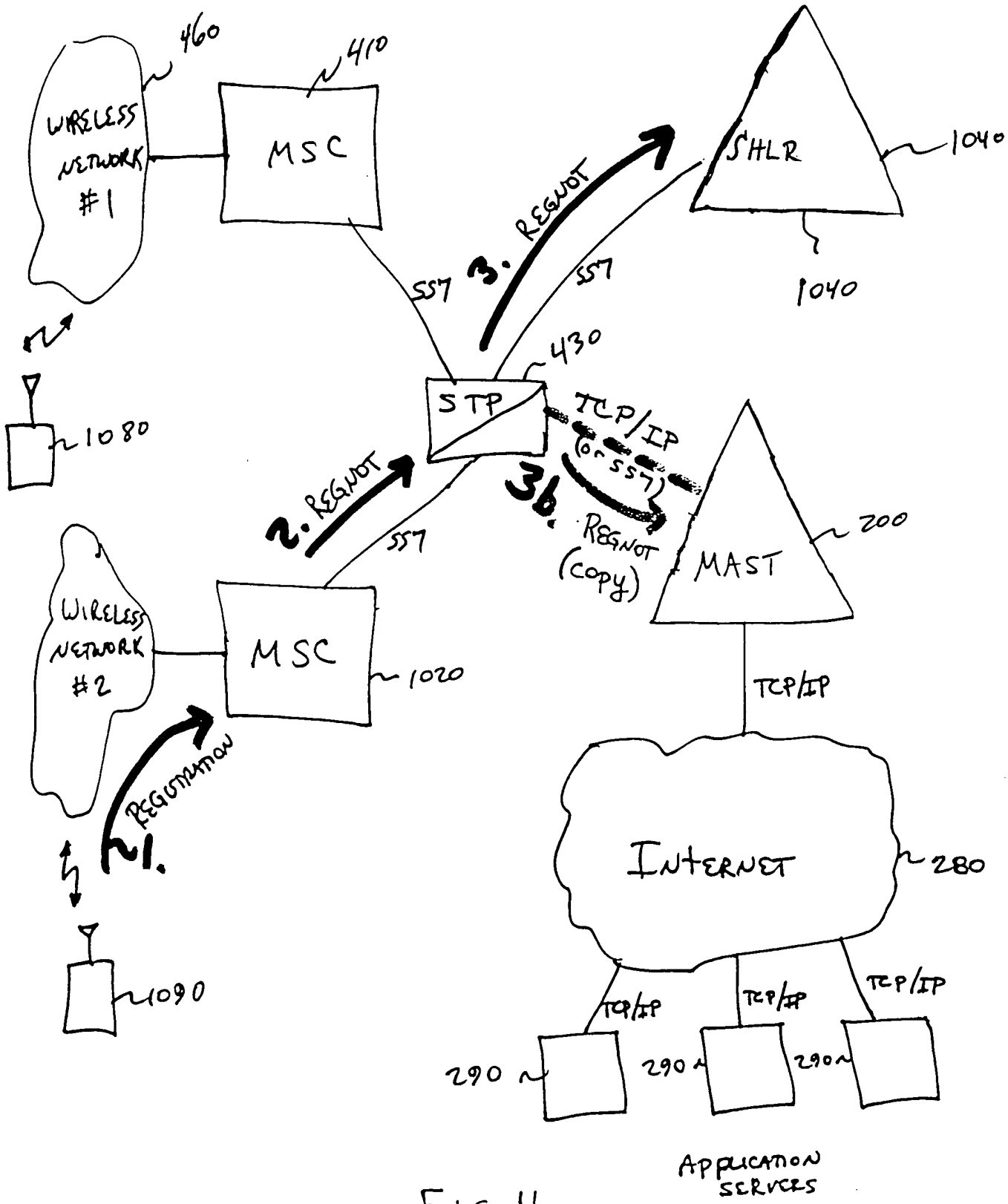

460
410
WIRELESS NETWORK #1
MSC
SHLR
1040
1040
557
3. REGNOT
557
430
STP
TCP/IP (or SS7)
1080
3b. REGNOT (copy)
2. REGNOT
557
MAST
200
WIRELESS NETWORK #2
MSC
1020
TCP/IP
REGISTRATION
1.
INTERNET
280
1090
TCP/IP
TCP/IP
TCP/IP
290
290
290
APPLICATION SERVERS

FIG. 4

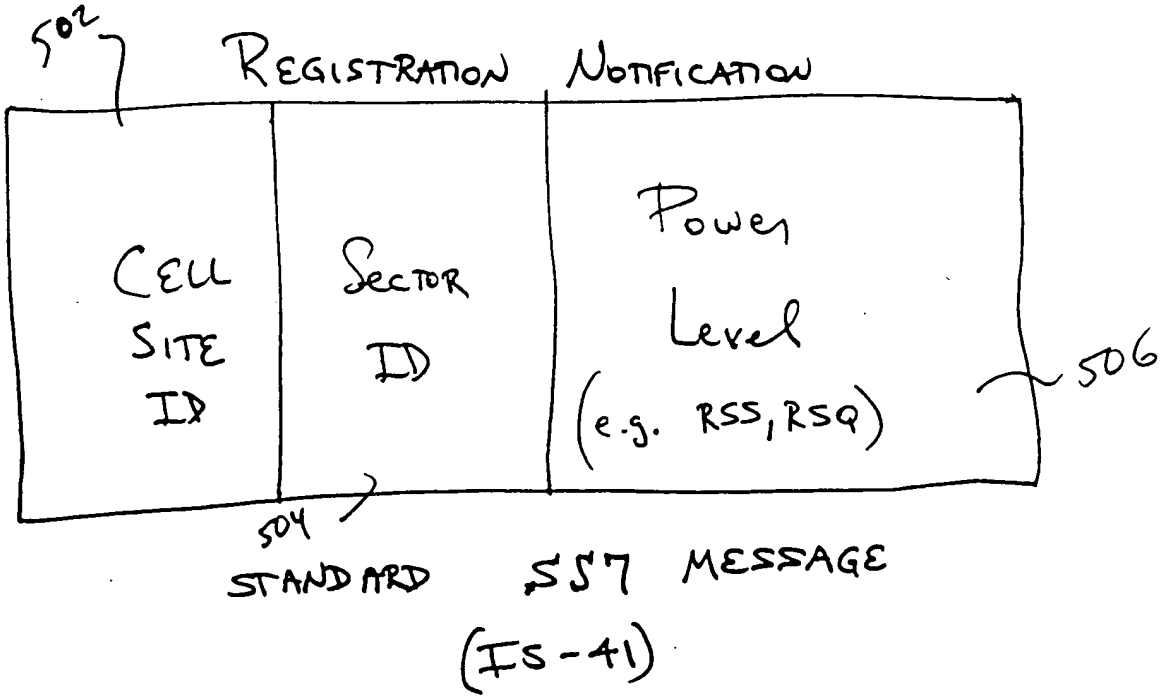

502
REGISTRATION NOTIFICATION
CELL SITE ID
SECTOR ID
POWER LEVEL (e.g. RSS, RSQ)
506
504
STANDARD 557 MESSAGE (IS-41)

FIG. 5A

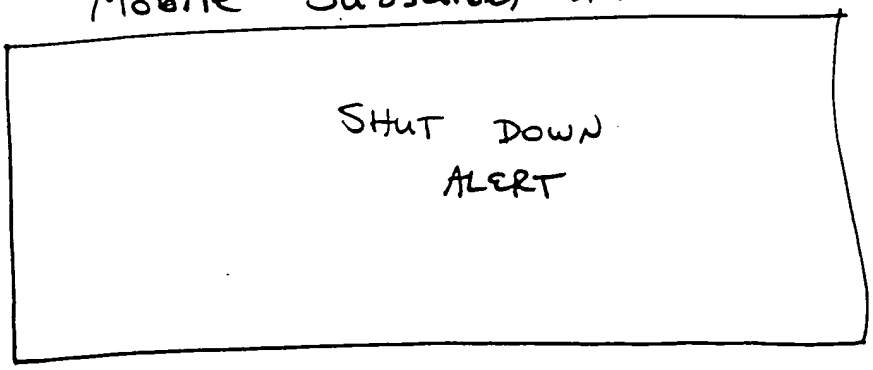
RegistrationNotification INVOKE Parameters	
Field	**Value**
Identifier	SET [NATIONAL 18]
Length	variable octets
Contents	
ElectronicSerialNumber	
MobileIdentificationNumber	
MSCID (Serving MSC)	
QualificationInformationCode	
SystemMyTypeCode (Serving MSC or VLR)	
AvailabilityType	
BorderCellAccess	
ControlChannelData	
ExtendedMSCID (VLR)	
LocationAreaID	
PC_SSN (Serving MSC or VLR)	
ReceivedSignalQuality	
ReportType	
SenderIdentificationNumber	
SMS_Address	
SMS_MessageWaitingIndicator	
SystemAccessData	
SystemAccessType	
SystemCapabilities	
TerminalType	
TransactionCapability	

RegistrationNotification INVOKE Parameters

PRIOR ART

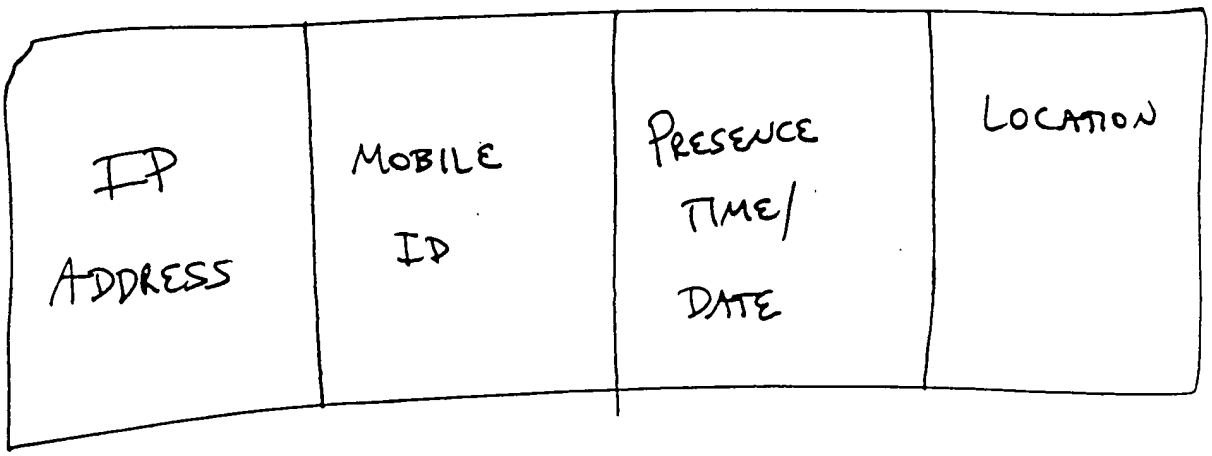
FIG. 5B

0022450 "2005-2500



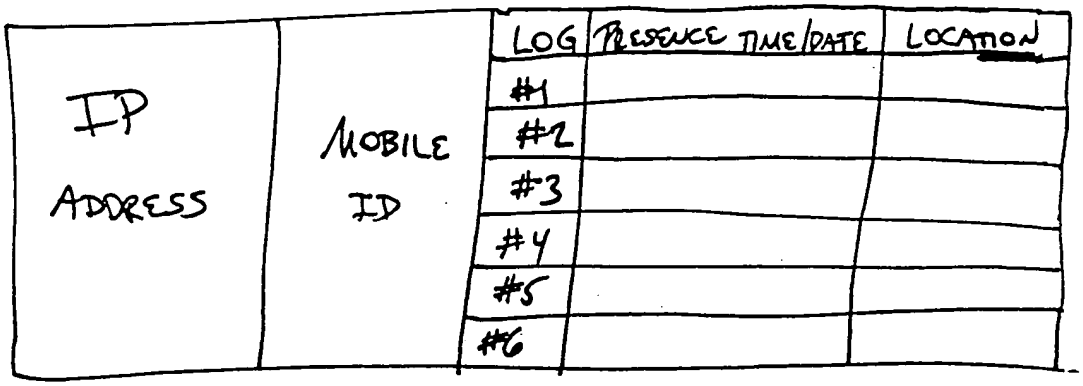
STANDARD SS7 MESSAGE
(IS-41)

FIG. 6



IP MESSAGE TO APPLICATION SERVER (e.g., to Chat Server)

FIG. 7A



IP MESSAGE TO APPLICATION SERVER

FIG. 7B

SAMPLE OF TABLE

MSID	ACTIVE Y/N	LAST DATE/TIME	PARAMETER 1	PARAMETER 2	PARAMETER 3
COMPARE FIELD	Y	N	Y	N	Y
SEND FIELD	Y	Y	Y	Y	Y
9083067462	Y	120314520000	XX	YY	ZZ

FIG. 8

SAMPLE DECISION TREE

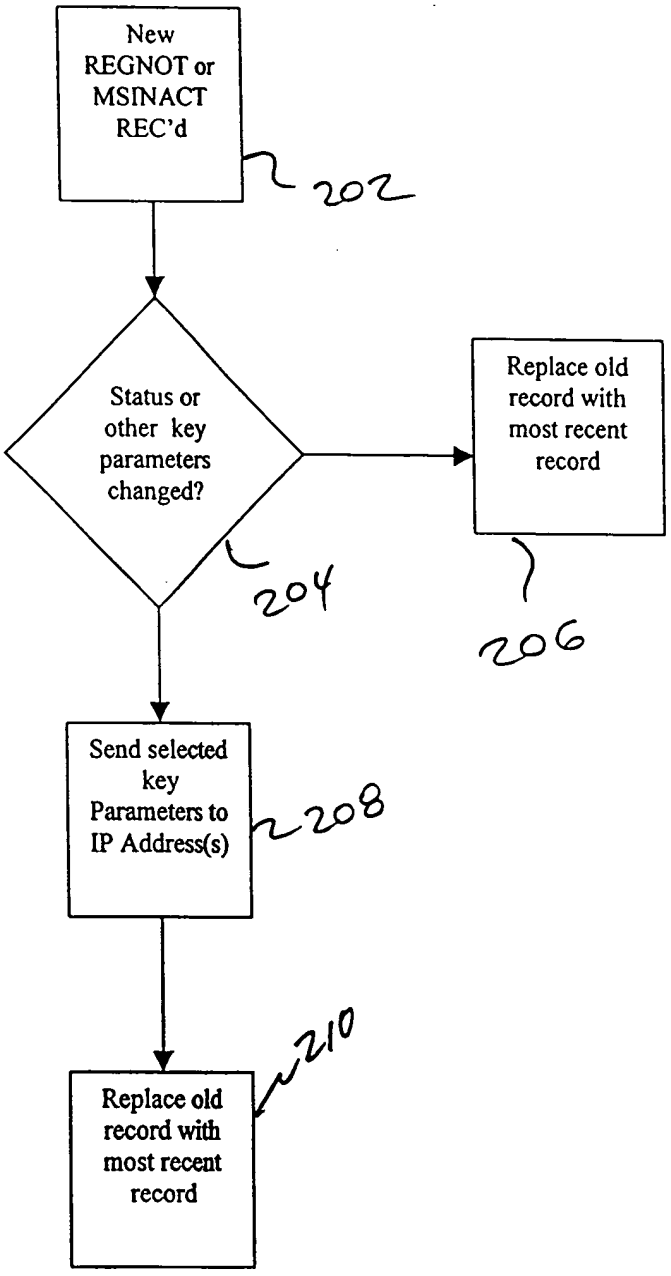


FIG. 9

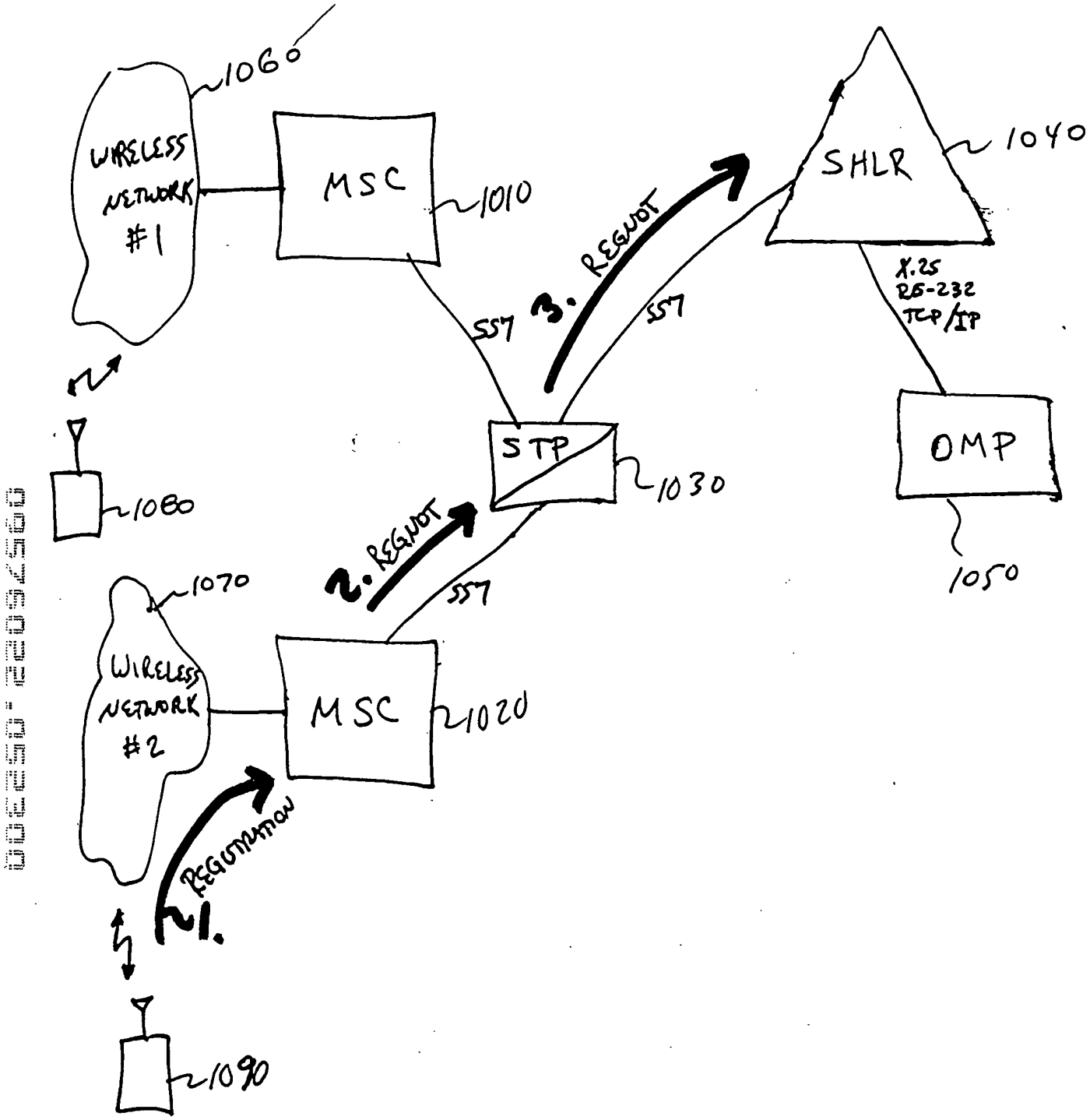

1060
WIRELESS NETWORK #1
MSC
1010
SHLR
1040
SS7
3. REQUOT
SS7
X.25
RS-232
TCP/IP
STP
1030
OMP
1050
1080
2. REQUOT
SS7
1070
WIRELESS NETWORK #2
MSC
1020
REGISTRATION
1.
1090

FIG. 10

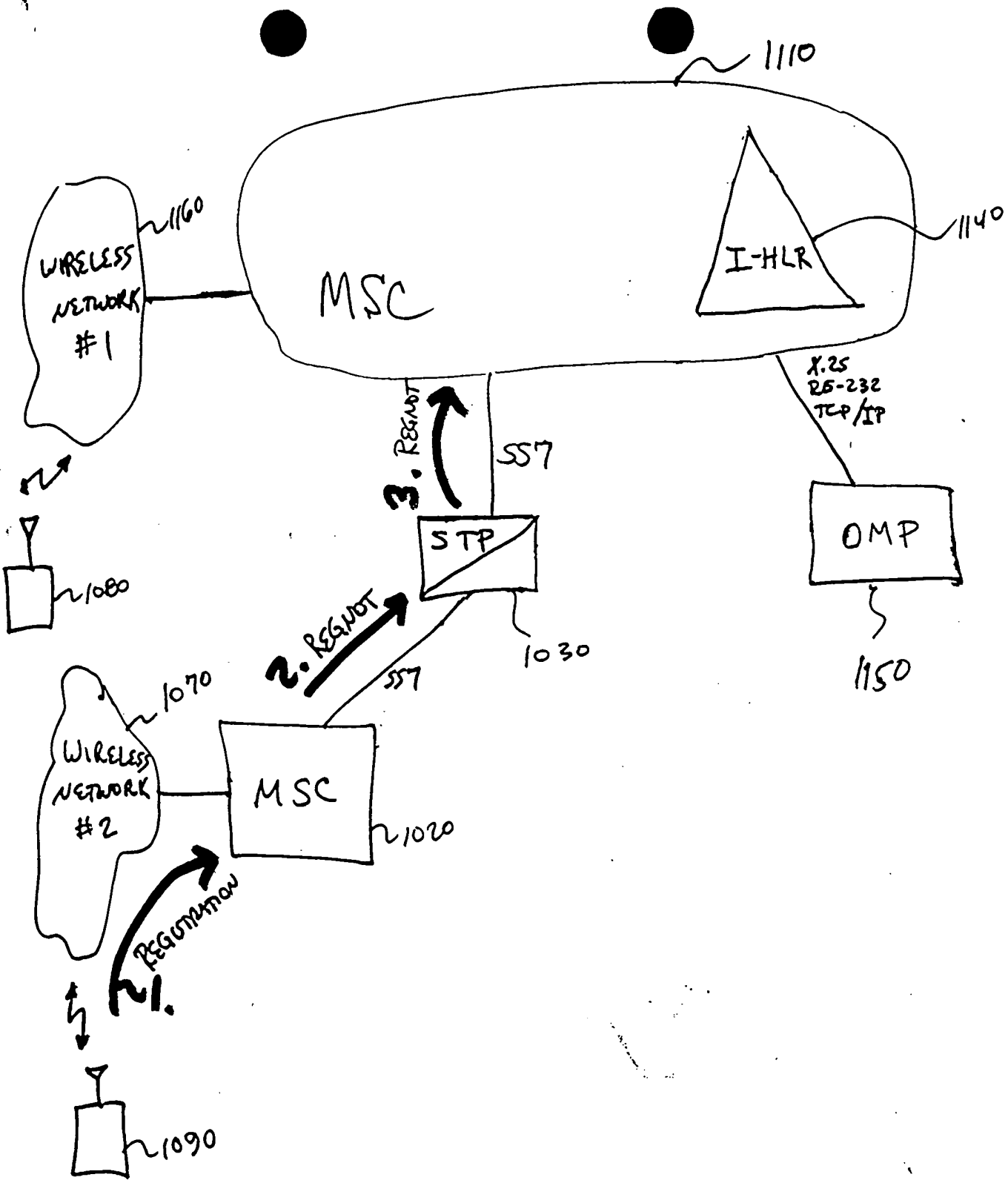

1110
WIRELESS NETWORK #1
1160
MSC
I-HLR
1140
X.25
RS-232
TCP/IP
3. REGNOT
557
STP
OMP
1080
2. REGNOT
1030
1150
1070
557
WIRELESS NETWORK #2
MSC
1020
REGISTRATION
1.
1090

FIG. 11